

REMARKS

This responds to the Office Action mailed on September 14, 2006.
Claims 17 and 23 are amended, no claims are canceled, and no claims are added; as a result, claims 1-33 remain pending in this application.

Examiner Interview

The Examiner is thanked for the opportunity to discuss the pending claims during the telephone interview on October 31, 2006.

§101 Rejection of the Claims

Claims 1-33 were rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

Claims 17-33 were rejected as being directed to an abstract idea. This rejection was discussed with the Examiner during the abovementioned telephone interview and, in response thereto, claims 17 and 23 have been amended to “storage medium embodying computer executable instructions”. It is understood that this amendment would overcome the current rejection and, accordingly, it is submitted that claims 17 and 23 are now allowable. Insofar as claims 18-22, and 24-28, 29, 31, and 33 are dependent upon claims 17 and 23, they are accordingly also allowable.

The Office Action submits that claims 1-16 are abstract in that they “do not provide a useful tangible output”.

The interim guidelines detail two ways to make an abstract idea statutory:

- 1.) The claimed invention "transforms" an article or physical object to a different state or thing.
- 2.) The claimed invention otherwise produces a useful, concrete and tangible result...

The relevant section in the Examination Guidelines is set out below.

ii. “Useful, Concrete and Tangible Result”

In *State Street*, the Federal Circuit examined some of its prior section 101 cases, observing that the claimed inventions in those cases were each for a **“practical application of an abstract idea”** because the elements of the invention operated to produce a **“useful, concrete and tangible result.”** *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. For example, the court in *State Street* noted that the claimed invention in *Alappat* “constituted a practical application of an abstract idea (a mathematical algorithm, formula, or calculation), because it produced ‘a useful, concrete and tangible result’—the **smooth waveform**.” *Id.* Similarly, the claimed invention in *Arrhythmia* “constituted a practical application of an abstract idea (a mathematical algorithm, formula, or calculation), because it corresponded to a useful, concrete and tangible thing—the condition of a patient’s heart.” *Id.*

In determining whether the claim is for a “practical application,” the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that **the final result is “useful, tangible and concrete.”** The Federal Circuit further ruled that it is of little relevance whether a claim is directed to a machine or process for the purpose of a § 101 analysis. *AT&T*, 172 F.3d at 1358, 50 USPQ2d at 1451.

A claim limited to a machine or manufacture, which has a practical application, is statutory. In most cases, a claim to a specific machine or manufacture will have a practical application. See *Alappat*, 33 F.3d at 1544, 31 USPQ2d at 1557 (**“the claimed invention as a whole is directed to a combination of interrelated elements which combine to form a machine for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means.** This is not a disembodied mathematical concept which may be characterized as an ‘abstract idea,’ but rather a specific machine to produce a useful, concrete, and tangible result.”); and *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02 (“the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’ – a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent

trades.”). Also see AT&T, 172 F.3d at 1358, 50 USPQ2d at 1452 (Claims drawn to a long-distance telephone billing process containing mathematical algorithms were held patentable subject matter because the process used the algorithm to produce a useful, concrete, tangible result without preempting other uses of the mathematical principle.).

It should be noted from the above that “[i]n determining whether the claim is for a **“practical application,”** the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the **final result is “useful, tangible and concrete.”**

Claim 1 relates a “method for converting an input signal at an input sample rate to one of a plurality of differing intended output sample rates and includes the limitation of “wherein an output signal is produced having a sequence of data samples approximating the input signal.” It is submitted that this claim is clearly for a practical application and provides a “Useful, Concrete and Tangible Result” as required by the Examination Guidelines.

"In Alappat a **smooth waveform** was held to be **‘a useful, concrete and tangible result’**. In the present invention, as claimed in claim 1, the useful, concrete and tangible result is an output signal with a different sample rate. The smooth waveform of Alappat would be an improved representation of an original waveform that is less smooth. Similarly, an output signal with a higher sample rate would contain many additional sample points compared to an input signal with a lower sample rate, and thus, like Alappat, provide an output that when displayed is more smooth than the original signal. It is submitted, at the very least in view of Alappat, that sample rate conversion of claim 1 provides a useful, concrete and tangible to a person of skill in the art.

An **example practical application** of the claimed invention (specifically sample rate conversion) is described with reference to Figure 5 of the application as filed:

In operation, the signal processing system 500 captures samples of an analog signal, processes the samples, and outputs the processed samples. The present invention may be employed to process

signals containing various types of information, such as audio information, control information and the like. To that end, A-D converter 514 converts analog signals to digital samples. Signal processing operations on the samples may be performed by host processor 502 or digital signal processor 520. Samples may be stored on hard disk drive 524 under the direction of disk controller 522. A user may request a particular signal processing operation using button set 512 and may view system status, or input or output waveforms on display 510. Once signals have been processed, they may be outputted using D-A converter 516 to convert samples to an analog signal.

(Application as filed page 13, paragraph 2)

It is submitted that the claimed invention provides a method of sample rate conversion which is useful, concrete and tangible. For example, the sample rate conversion method claimed in claim 1 may be utilized in digital audio processing. As disclosed in the application as filed (see referenced text above), “[t]he present invention may be employed to process signals containing various types of information, such as audio information, control information and the like.” It is submitted that the final result of claim 1 (sample rate conversion) is for a practical application. Further, it is important to note that the focus in the current inquiry is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result is “useful, tangible and concrete.” Further, it is submitted that a person of ordinary skill in the art would immediately appreciate why the invention as claimed (sample rate conversion) is useful.

Applicant’s wish to point out that MPEP 2107 - “Guidelines for Examination of Applications for Compliance with the Utility Requirement” - state that “[a]n invention has a well-established utility if (i) *a person of ordinary skill in the art would immediately appreciate why the invention is useful based on the characteristics of the invention (e.g., properties or applications of a product or process)*, and (ii) *the utility is specific, substantial, and credible*. Further, MPEP 2107 states that “[i]f the applicant has asserted that the claimed invention is useful for any particular practical purpose (i.e., it has a “specific and substantial utility”) and the assertion would be considered credible by a person of ordinary skill in the art, do not impose a rejection based on lack of utility.”

In view of the remarks above it is submitted that claim 1 is allowable. As claims 2-11 are dependent upon claim 1 they are also allowable. Insofar as claims 28, 30 and 32 are dependent upon claim 1, they are also allowable.

Further, in view of the remarks above it is also submitted that claim 12 is allowable. As claims 13-16 are dependent upon claim 12 they are also allowable. Insofar as claims 28, 30 and 32 are dependent upon claim 1, they are also allowable.

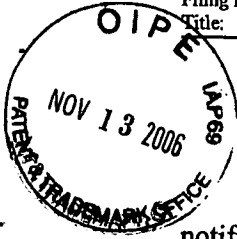
AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 - EXPEDITED PROCEDURE

Serial Number: 09/427,815

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Title: SAMPLE RATE CONVERTER HAVING DISTRIBUTED FILTERING

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney 408-278-4041 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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